

## **ABSTRACT**

In order to make it possible to detect a carcinogen highly sensitively and more easily in a short time, the present invention provides a rat having a high sensitivity to a carcinogen, and a method for detecting carcinogens using the rat, and a method for screening anticancer substances using the rat made to develop a cancer. It has been found that a rat whose normal function in gap junction is inhibited has a high sensitivity to a carcinogen. For the inhibition of normal function in gap junction, part of a connexin gene is made to be deficient and a plasmid vector engineered to carry a gene deficient in connexin function is introduced into a rat to make a transgenic rat. By using the rat of the present invention, it becomes possible to detect a carcinogen highly sensitively and more easily in a short time, and the rat of the present invention made to develop a cancer can be effectively used for the screening of anticancer substances.